

ABSTRACT

A first aspect of the present invention is concerned with a double-helix electrode structure for sensing electrical activity of a patient's diaphragm, comprising
5 first and second helical electrodes disposed in a double-helix arrangement for being positioned in the gastro-esophageal sphincter of the patient's diaphragm in view of sensing electrical activity of the patient's diaphragm. According to a second aspect, the present invention provides a pressure detection and acquisition device comprising a semiconductor substrate, a pressure sensor implemented on the semiconductor
10 substrate and producing, when subjected to an external pressure, a pressure representative signal, and a signal acquisition and transmission circuit integrated to the semiconductor substrate, connected to the pressure sensor, and supplied with the pressure representative signal. Other aspects of the present invention relate to an *EMG_{di}* signal and pressure acquisition catheter.

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